DOCKET NO. 217199US0

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

IN RE APPLICATION OF: Daisuke SHIIBA et al

SERIAL NO: 10/014,356 GROUP ART UNIT: 1761

FILED: December 14, 2001

FOR: ACIDIC OIL-IN-WATER TYPE EMULSION COMPOSITION

INFORMATION DISCLOSURE STATEMENT UNDER 37 C.F.R. §1.97

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SIR:

Applicants wish to disclose the following information.

REFERENCES

☐ The Applicant(s) wish to make of record the references listed on the attached Form PTO-1449. Copies of the listed references are attached, where required, as are either statements of relevancy or any readily available English translations of pertinent portions of any non-English language references.

☐ A check is attached in the amount required under 37 CFR §1.17(p).

RELATED CASES

■ Attached is a list of Applicants' pending applications which may be related to the present application. A copy of the claims and drawings of the pending applications is attached.

☐ A check is attached in the amount required under 37 CFR §1.17(p).

CERTIFICATION

☐ Each item of information contained in this information disclosure statement was first cited in a communication from a foreign patent office in a counterpart foreign application not more than three months prior to the filing of this statement.

☐ No item of information contained in this information disclosure statement was cited in a communication from a foreign patent office in a counterpart foreign application or, to the knowledge of the undersigned, having made reasonable inquiry, was known to any individual designated in 37 CFR §1.56(c) more than three months prior to the filing of this statement.

DEPOSIT ACCOUNT

■ Please charge any additional fees for the papers being filed herewith and for which no check is enclosed herewith, or credit any overpayment to deposit account number 15-0030. A duplicate copy of this sheet is enclosed.

Respectfully submitted,

OBLON, SPIVAK, McCLELLAND,
MAIER & NEUSTADT, P.C.

Norman F. Oblon
Registration No. 24,618

Roland E. Martin
Registration No. 48,082

22850

Tel. (703) 413-3000
Fax. (703) 413-2220
(OSMMN 05/03)

LIST OF RELATED CASES

Docket Number	Serial or Patent Number	Filing or Issue Date	Inventor/ Applicant
233619US0 PCT	10/343,831	02/10/03	KOIKE, et al.
233628US0 PCT	10/343,748	02/06/03	KOIKE, et al.
233632US0 PCT	10/343,742	02/06/03	KOIKE, et al.
216527US0 PCT	10/019,427	12/31/01	MASUI, et al.
216537US0 PCT	10/009,494	04/08/02	MASUI, et al.
217199US0*	10/014,356	12/14/01	SHIIBA, et al.

*Present Application; listed for information

235619

Claims

1. An oil/fat composition comprising:

i) 10.1 to 94.9 wt.% of a triglyceride;

ii) 0.1 to 30 wt.% of a monoglyceride; and

iii) 5 to 59.9 wt.% of a diglyceride which has, as a fatty acid constituent thereof, 15 to 90 wt.% of an ω3-unsaturated fatty acid having less than 20 carbon atoms.

2. The oil/fat composition according to claim 1, wherein said ω3-unsaturated fatty acid having less than 20 carbon atoms is α-linolenic acid.

3. The oil/fat composition according to claim 1 or 2, wherein a weight ratio of said diglyceride to said monoglyceride is greater than or equal to 1 and POV is 10 or less.

4. The oil/fat composition according to any one of claims 1 to 3, which has a POV of 3 or less, has a color (10R + Y) of 25 or less, and comprises 47 to 89.9 wt.% of said triglyceride, 0.1 to 2 wt.% of said monoglyceride, 10 to 50 wt.% of said diglyceride, and 1 wt.% or less of a free fatty acid (salt), wherein said diglyceride has, as fatty acid constituents thereof, 30 to 70 wt.% of α-linolenic acid, 10 to 50 wt.% of oleic acid, 5 to 40 wt.% of an ω6-unsaturated fatty acid, a fatty acid having at least two carbon-carbon double bonds/(ω9-unsaturated fatty acid + saturated fatty acid) at a weight ratio of 1.2 to 5, 80 to 100 wt.% of an unsaturated fatty acid; said triglyceride has, as said fatty acid constituents thereof, 25 wt.% or less of an ω3-unsaturated fatty acid and 55 to 100 wt.% of an unsaturated fatty acid; and the content of a fatty acid

having at least 4 carbon-carbon double bonds is 2 wt.% or less in all the fatty acid constituents.

5. The oil/fat composition according to any one of claims 1 to 3, which has a POV of 1 or less, has a color (10R + Y) of 20 or less, and comprises 53 to 84.9 wt.% of said triglyceride, 0.1 to 1.5 wt.% of said monoglyceride, 15 to 45% of said diglyceride, and 0.5 wt.% or less of a free fatty acid (salt), wherein said diglyceride has, as fatty acid constituents thereof, 40 to 65 wt.% of α-linolenic acid, 12 to 30 wt.% of oleic acid, 10 to 30 wt.% of an ω6-unsaturated fatty acid, a fatty acid having at least two carbon-carbon double bonds/(ω9-unsaturated fatty acid + saturated fatty acid) at a weight ratio of 1.5 to 4 and 90 to 100 wt.% of an unsaturated fatty acid; said triglyceride has, as fatty acid constituents thereof, 20 wt.% or less of an ω3-unsaturated fatty acid and 70 to 100 wt.% of an unsaturated fatty acid; and all said fatty acid constituents are free of a fatty acid having at least 4 carbon-carbon double bonds.

6. The oil/fat composition according to any one of claims 1 to 5, which further comprises a phytosterol in an amount of 0.05 wt.% or greater.

7. A food comprising the oil/fat composition as claimed in any one of claims 1 to 6.

8. A feed comprising the oil/fat composition as claimed in any one of claims 1 to 6.

9. A pharmaceutical comprising the oil/fat composition as claimed in any one of claims 1 to 6.

10. A cooking oil comprising the oil/fat composition as claimed any one of claims 1 to 6.

11. The food according to claim 7, wherein said food is an oil-in-water type oil/fat-containing food.

12. The food according to claim 7, wherein said food is a water-in-oil type oil/fat-containing food.

13. The food according to claim 7, wherein said food is a pocket-size oil/fat-containing food.

14. A food according to claim 7, wherein said food is a bakery food.

15. In a method of preparing a food composition comprising a fat or oil, the improvement comprising preparing said food composition with the oil/fat composition as claimed in any one of claims 1 to 6.

16. In a method of cooking a food composition in an oil/fat, the improvement comprising heating a food in the oil/fat composition as claimed in any one of claims 1 to 6.

Abstract

Provided is an oil/fat composition comprising 10.1 to 94.9 wt.% of a triglyceride, 0.1 to 30 wt.% of a monoglyceride and 5 to 59.9 wt.% of a diglyceride which has, as a fatty acid constituent thereof, 15 to 90 wt.% of an ω3-unsaturated fatty acid having less than 20 carbon atoms.

The oil/fat composition of the present invention has excellent heat stability, has body-fat-accumulation resisting action, visceral-fat-accumulation resisting action, blood-sugar-level lowering action, insulin resistance improving action and leptin lowering action and is useful for, as well as pharmaceuticals, preventive or remedial food for diabetes or obesity, and feed.

Claims

1. An oil/fat composition comprising 60 to 100 wt.% of a diglyceride, wherein said diglyceride has, as fatty acid constituents thereof, 15 to 90 wt.% of an ω3-unsaturated fatty acid having less than 20 carbon atoms and a cis ω3-unsaturated fatty acid/(cis ω6-unsaturated fatty acid + saturated fatty acid + trans unsaturated fatty acid) at a weight ratio of 1 to 6.

2. The oil/fat composition according to claim 1, wherein said ω3-unsaturated fatty acid is α-linolenic acid.

3. The oil/fat composition according to claim 1 or 2, wherein said diglyceride has, as the fatty acid constituents thereof, 10 to 60 wt.% of an ω9-unsaturated fatty acid.

4. The oil/fat composition according to any one of claims 1 to 3, which comprises 65 to 99 wt.% of said diglyceride, 0.1 to 4 wt.% of a monoglyceride, 0.1 to 34.9 wt.% of a triglyceride and 1.5 % or less of a free fatty acid (salt), wherein said diglyceride has, as fatty acid constituents thereof, 20 to 80 wt.% of α-linolenic acid, 10 to 60 wt.% of oleic acid, 2 to 50 wt.% of an ω6-unsaturated fatty acid, 70 to 100 wt.% of an unsaturated fatty acid and a cis ω3-unsaturated fatty acid/(cis ω6-unsaturated fatty acid + saturated fatty acid + trans unsaturated fatty acid) at a weight ratio of 1.2 to 5; the triglyceride has, as a fatty acid constituent thereof, 70 to 100% of an unsaturated fatty acid; and the content of a polyunsaturated fatty acid having at least 4 carbon-carbon double bonds is 5 wt.% or less based on all the fatty acid constituents of the oil/fat composition.

5. The oil/fat composition according to any one of claims 1 to 3, which comprises 70 to 95 wt.% of said diglyceride, 0.1 to 2 wt.% of a monoglyceride, 2 to 29.9 wt.% of a triglyceride and 1 wt.% or less of a free fatty acid (salt), wherein said diglyceride has, as fatty acid constituents thereof, 30 to 70 wt.% of α-linolenic acid, 10 to 50 wt.% of oleic acid, 5 to 40 wt.% of an ω6-unsaturated fatty acid, 80 to 100 wt.% of an unsaturated fatty acid and a cis ω3-unsaturated fatty acid/(cis ω6-unsaturated fatty acid + saturated fatty acid + trans unsaturated fatty acid) at a weight ratio of 1.4 to 4; the triglyceride has, as a fatty acid constituent thereof, 80 to 100 wt.% of an unsaturated fatty acid; and the content of a polyunsaturated fatty acid having at least 4 carbon-carbon double bonds is 2% or less based on all the fatty acid constituents of the oil/fat composition.

6. The oil/fat composition according to any one of claims 1 to 3, which comprises 75 to 92 wt.% of said diglyceride, 0.1 to 1.5 wt.% of a monoglyceride, 6 to 24.9 wt.% of a triglyceride and 0.5 wt.% or less of a free fatty acid (salt), wherein said diglyceride has, as fatty acid constituents thereof, 40 to 65 wt.% of α-linolenic acid, 12 to 30 wt.% of oleic acid, 10 to 30 wt.% of an ω6-unsaturated fatty acid, 90 to 100 wt.% of an unsaturated fatty acid and a cis ω3-unsaturated fatty acid/(cis ω6-unsaturated fatty acid + saturated fatty acid + trans unsaturated fatty acid) at a weight ratio of 1.5 to 3; the triglyceride has, as a fatty acid constituent thereof, 90 to 100% of an unsaturated fatty acid; and the content of a polyunsaturated fatty acid having at least 4 carbon-carbon double bonds is 0 based on all the fatty acid constituents of the oil/fat composition.

7. The oil/fat composition according to any one of claims 1 to 6, which further comprises a phytosterol in an amount of 0.05 wt.% or greater.

8. A food comprising the oil/fat composition as claimed in any one of Claims 1 to 7.

9. A feed comprising the oil/fat composition as claimed in any one of claims 1 to 7.

10. A pharmaceutical comprising the oil/fat composition of as claimed in any one of claims 1 to 7..

11. The food according to claim 8, which is an oil-in-water type oil/fat-containing food.

12. The food according to claim 8, which is a water-in-oil type oil/fat-containing food.

13. The food according to claim 8, which is a pocket-size oil/fat-containing food.

14. The food according to claim 8, which is a bakery food.

15. In a method of preparing a food composition comprising a far or oil, the improvement comprising preparing said food composition with the oil/fat composition of claim 1.

Abstract

Provided is an oil/fat composition comprising 60 to 100 wt.% of a diglyceride wherein the diglyceride has, as the fatty acid constituent thereof, 15 to 90 wt.% of an ω3-unsaturated fatty acid having less than 20 carbon atoms and a cis ω3-unsaturated fatty acid/(cis ω6-unsaturated fatty acid + saturated fatty acid + trans unsaturated fatty acid) at a weight ratio of 1 to 6.

The composition is excellent in visceral fat burning property, body fat burning property and stability against autoxidation.

CLAIMS

1. An oil/fat composition comprising 5 to 99.9 wt.% of a monoglyceride having, as a fatty acid constituent thereof, 15 to 90 wt.% of an ω3-unsaturated fatty acid having less than 20 carbon atoms, 1 to 80 wt.% of an ω9-unsaturated fatty acid and 2 to 50 wt.% of an ω6-unsaturated fatty acid; and 0.1 to 49.9% of a diglyceride, wherein the weight ratio of the diglyceride to the monoglyceride is less than 1 and the content of polyunsaturated fatty acid having at least 4 carbon-to-carbon double bonds is 20 wt.% or less of all the fatty acid constituents.

2. An oil/fat composition according to claim 1, which has a POV of 10 or less and contains α-linolenic acid as the ω3-unsaturated fatty acid.

3. An oil/fat composition according to claim 1 or 2, which has a POV of 3 or less, has a color (10R + Y)of 30 or less, comprises 60 to 99.5 wt.% of the monoglyceride, 0.5 to 10 wt.% of the diglyceride, 39.5 wt.% or less of a triglyceride and a free fatty acid, or salt thereof, of 1 wt.% or less, wherein the monoglyceride has, as a fatty acid constituent thereof, 30 to 70 wt.% of α-linolenic acid, 10 to 50 wt.% of oleic acid, 5 to 40 wt.% of the ω6-unsaturated fatty acid, 80 to 100 wt.% of an unsaturated fatty acid, and a fatty acid having at least two carbon-to-carbon double bonds/(ω9-unsaturated fatty acid + saturated fatty acid) at a weight ratio of 1.2 to 5; and the content of fatty acids having at least 4 carbon-to-carbon double bonds is 2 wt.% or less.

4. An oil/fat composition according to claim 1 or 2, which has a POV of 1 or less, has a color (10R + Y)of 25 or less, comprises 75 to 99 wt.% of the monoglyceride, 1 to 5 wt.% of the diglyceride, 24 wt.% or less of a triglyceride and a free fatty acid, or salt thereof, of 0.5 wt.% or less, wherein the monoglyceride has, as a fatty acid constituent thereof, 40 to 65 wt.% of α-linolenic acid, 12 to 30 wt.% of oleic acid, 10 to 30 wt.% of the ω6-unsaturated fatty acid, 90 to 100 wt.% of an unsaturated fatty acid; and the content of a fatty acid having at least two carbon-to-carbon double bonds/(ω9-unsaturated fatty acid + saturated fatty acid) at a weight ratio of 1.5 to 4; and the content of a fatty acid having at least 4 carbon-to-carbon double bonds is 2 wt.% in all the fatty acid constituents.

5. An oil/fat composition according to any one of claims 1 to 4, further comprising a phytosterol in an amount of 0.05 wt.% or more.

6. An oil/fat composition according to any one of claims 1 to 4, further comprising 0.02 to 0.5 wt.% of a crystallization inhibitor.

7. An oil/fat composition according to any one of any one of claims1 to 4, further comprising 0.01 to 5 wt.% of an antioxidant.

8. A food containing an oil/fat composition as claimed in any one of claims 1 to 7.

9. A feed containing an oil/fat composition as claimed in any one of claims 1 to 7.

10. A pharmaceutical composition containing an oil/fat composition as claimed in any one of claims 1 to 7.

11. Method of preparing a food article comprising mixing one or more food materials with the oil/fat composition of as claimed in any one of claims 1 to 7.

12. A method of reducing glutamic oxaloacetic transaminase and glutamic pyruvic transaminase in the blood comprising administering to a patient in need thereof, a food composition comprising the oil/fat composition as claimed in any one of claims 1 to 7.

13. The method as claimed in claim 16, wherein said food composition comprises said oil/fat composition in an amount of 0.1 to 100%.

14. A method of reducing body weight and visceral fat weight in an human or an animal comprising administering to a patient in need thereof, a food composition comprising the oil/fat composition as claimed in any one of claims 1 to 7.

15. The method as claimed in claim 18, wherein said food composition comprises said oil/fat composition in an amount of 1 to 80%.

16. A method of treating obesity comprising administering to a patient in need thereof, a food composition comprising the oil/fat composition as claimed in any one of claims 1 to 7.

17. The method as claimed in claim 20 wherein said food composition comprises said oil/fat composition in an amount of 2 to 80%.

ABSTRACT

An oil/fat composition comprising 5 to 99.9 wt.% of a monoglyceride having, as fatty acid constituents thereof, 15 to 90 wt% of an ω3-unsaturated fatty acid having less than 20 carbon atoms, 1 to 80 wt.% of an ω9-unsaturated fatty acid and 2 to 50 wt.% of an ω6-unsaturated fatty acid; and 0.1 to 49.9 wt.% of a diglyceride, wherein a weight ratio of the diglyceride to the monoglyceride is less than 1 and the content of a polyunsaturated fatty acid having at least 4 carbon-to-carbon double bonds is 20% or less in all the fatty acid constituents.

The oil/fat composition according to the present invention has excellent processing properties, good taste and excellent lowering action against glutamic oxaloacetic transaminase (GOT) and glutamic pyruvic transaminase (GPT) levels in blood. It is useful not only for pharmaceuticals but also for preventive or remedial foods of feeds effective for hepatic function disturbances or obesity.

CLAIMS 216527

1, A water-in-oil type emulsified fat and/or oil composition which is composed of (1) the aqueous phase based on water and (2) the oil phase of fat and/or oil comprising 15 % by weight or more, based on the total oils and fats, of diglycerides, and the composition including a flavor component(s), 30 % by weight or more of the said emulsified composition being able to be reversed in the phase within one minute after it has been introduced into water at 36 C° .

2, The water-in-oil type emulsified fat and/or oil composition as claimed in Claim 1, which comprises a demulsifier.

3, The water-in-oil type emulsified fat and/or oil composition as claimed in Claim 2, wherein the demulsifier is at least one member selected from the group consisting of a polyglycerol fatty acid ester having HLB of 7 or more, a water-soluble decomposed protein, lysolecithin having HLB of 8 or more, a sucrose fatty acid ester having HLB of 5 or more, a monoglyceride organic acid ester having HLB of 8 or more, and a sorbitan fatty acid ester having HLB of 8 or more.

4, The composition as claimed in Claim 1, wherein the fat and/or oil comprises 15 to 90 % by weight of diglycerides and 85 to 10 % by weight of triglycerides.

5, The composition as claimed in Claim 1, which comprises 0.1 to 10 % by weight of a flavor component.

ABSTRACT

The present invention provides a water-in-oil type emulsified fat and/or oil composition which comprises a diglyceride and which is excellent in a flavor release during the time for ingestion thereof. That is, the present invention provides a water-in-oil type emulsified fat and/or composition which is composed of (1) the aqueous phase based on water and (2) the oil phase comprising 15 % by weight or more, based on the total oils and fats, of diglycerides, the composition including a flavor component(s), 30 % by weight or more of the said emulsified composition being able to be reversed in phase within one minute after it has been introduced into water at 36 C° .

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CLAIMS

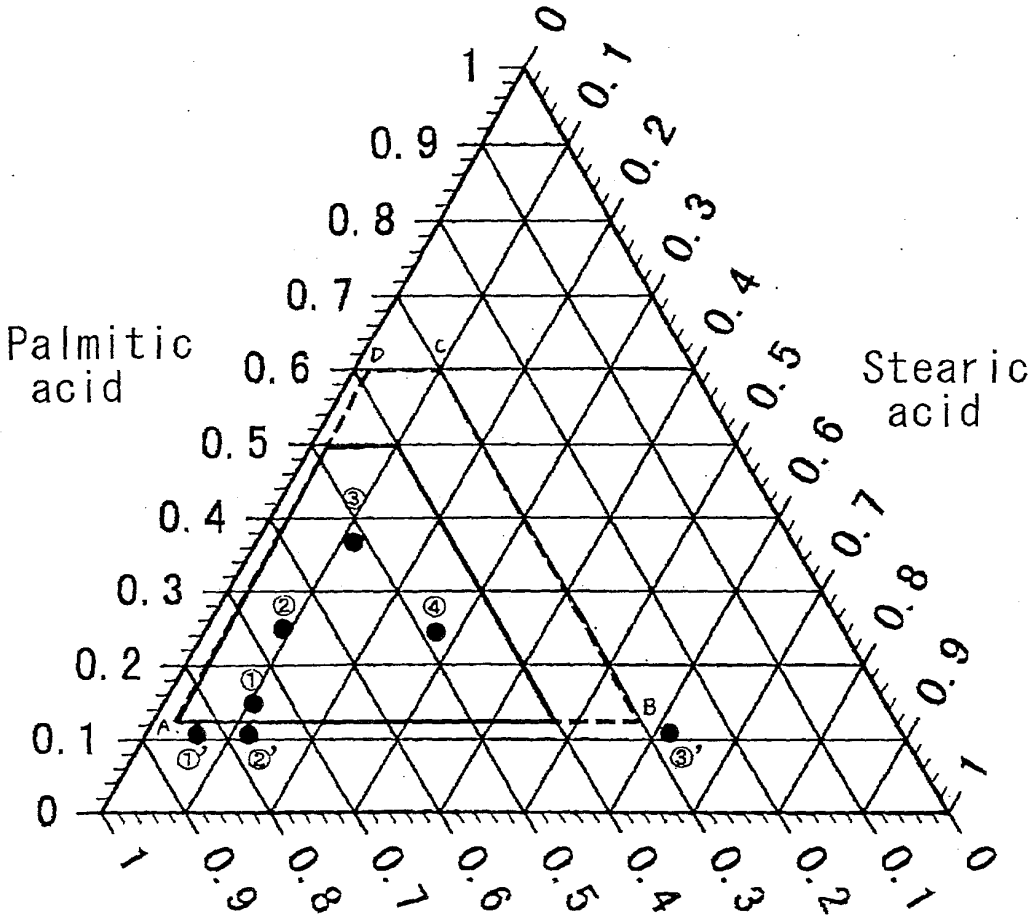
1, An water-in-oil type emulsified fat and/or oil composition which is composed of (1) the oil phase comprising 35 to 95 % by weight, based on the total oils and fats, of a diglyceride(s) having its increasing melting point of lower than 20 °C and the balance of triglycerides having fatty acid parts comprising 13 to 60 % by weight of palmitic acid and 5 % by weight or less of fatty acids having 12 or less carbon atoms, polymorph of the triglycerides being stable in the form of ß' and (2) the aqueous phase based on water.

2, The water-in-oil type emulsified fat and/or oil composition as claimed in Claim 1, wherein a ratio of palmitic acid, stearic acid and an unsaturated fatty acid having 16 or more carbon atoms among fatty acids constituting triglycerides is in the range surrounded by points A (13, 2, 85), B (13, 57, 30), C (60, 10, 30) and D (60, 2, 38) in the triangular chart in Fig. 1.

ABSTRACT

The present invention provides a water-in-oil type emulsified fat and/or oil composition of which emulsification is stable in spite of containing a high content of water and which is excellent during storage in physical properties and feeling on eating. That is, the present invention provides an water-in-oil type emulsified oil and/or fat composition which is composed of (1) the oil phase comprising 35 to 95 % by weight, based on the total oils and fats, of a diglyceride(s) having its increasing melting point of lower than 20 C° and the balance of triglycerides having fatty acid parts comprising 13 to 60 % by weight of palmitic acid and 5 % by weight or less of fatty acids having 12 or less carbon atoms, polymorph of the triglycerides being stable in the form of ß' and (2) the aqueous phase based on water.

Fig. 1



An unsaturated fatty acid having 16 or more carbon atoms